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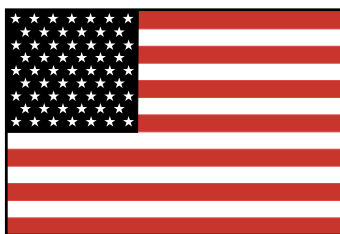
**Federal Aviation
Administration**

AFS-600

Regulatory Support Division

ADVISORY CIRCULAR 43-16A

AVIATION MAINTENANCE ALERTS



ALERT
NUMBER
276



JULY
2001

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**U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
WASHINGTON, DC 20590**

AVIATION MAINTENANCE ALERTS

The Aviation Maintenance Alerts provide a common communication channel through which the aviation community can economically interchange service experience and thereby cooperate in the improvement of aeronautical product durability, reliability, and safety. This publication is prepared from information submitted by those who operate and maintain civil aeronautical products. The contents include items that have been reported as significant, but which have not been evaluated fully by the time the material went to press. As additional facts such as cause and corrective action are identified, the data will be published in subsequent issues of the Alerts. This procedure gives Alerts' readers prompt notice of conditions reported via Malfunction or Defect Reports. Your comments and suggestions for improvement are always welcome. Send to: FAA; ATTN: Designee Standardization Branch (AFS-640); P.O. Box 25082; Oklahoma City, OK 73125-5029.

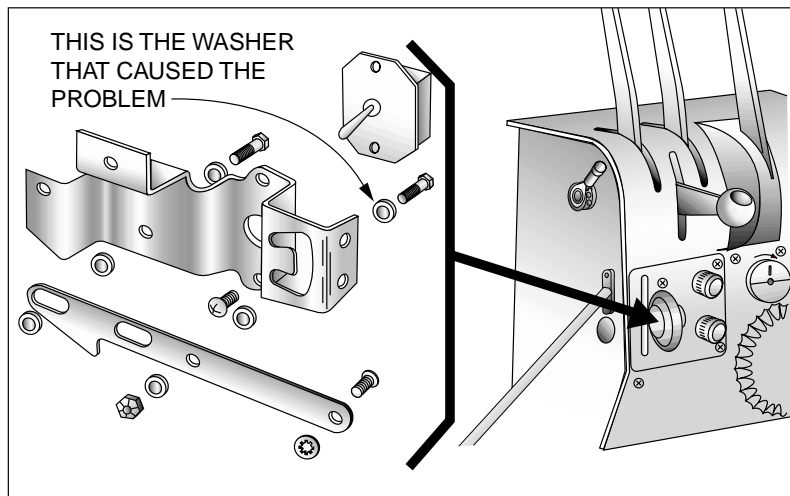
AIRPLANES

BEECH

Beech; Model E18S; Uncommanded Landing Gear Retraction; ATA 3230

The pilot reported that during takeoff, with the airspeed at 70 knots, the landing gear retracted without command. There were no personal injuries; however, there was damage to the aircraft requiring an aircraft incident report.

During an investigation, a technician discovered that when the gear selector handle (P/N 644-183864) was moved to the "down-and-locked" position, it did not always fully engage in the detent. (Refer to the illustration.) He disassembled the pedestal and discovered a small washer was getting caught in the detent groove. When the washer got caught in the detent groove, the gear handle stopped on the edge of the detent. Even slight hand pressure provided enough impetus for the gear handle to "pop" upward into the "gear-up" position.



The landing gear selector handle is not normally removed during scheduled inspections; however, a gear retraction test is required. The submitter suggested maintenance technicians use this opportunity to ensure the handle goes completely into the "down-and-locked" detent each time the gear is placed in the "down" position. In this case, the gear handle caught approximately once every seven cycles.

Aircraft total time-14,561 hours.

Beech; Model C-23; Sundowner; Deteriorated Flexible Plumbing; ATA None

In the process of an annual inspection, a technician discovered that most of the flexible fluid lines installed in the aircraft were stiff and deteriorated.

Two of the flexible brake lines were chafing on the firewall and worn smooth. Also, the lines were leaking through the hose sidewall in the chafed area. The technician replaced all the flexible brake lines between the tanks and the fuel selector valve.

All the flexible lines installed in this aircraft appeared to be original equipment and were approximately 30 years old. This is considerably over the manufacturer's recommended replacement time! A word to the wise should be sufficient; however, this type of report continues to be received.

Part total time in service-30+ years.

Beech; Model B24R; Sierra; Wing Flap Cable Damage; ATA 2750

While conducting an annual inspection, the technician discovered a wing flap cable was frayed.

The flap cable (P/N 169-524074) had several broken cable strands at one location. After further investigation, the technician found the cable contacted a screw head when the flaps were in the "full-up" position.

Although the submitter did not give the location of the screw head, he recommended installing chafe protection on the screw head to protect the cable. He also suggested checking the flap cables for condition during maintenance and inspections in the area.

Part total time not reported.

Beech; Model 35C33; Debonair; Empennage Cracks; ATA 5500

During a 100-hour inspection, the technician found several cracks in the empennage structure.

The cracks were located in the doubler (P/N 002-440000-143), the right skin section (P/N 33-410000-662), and the aft bulkhead (P/N 002-440024-65). There were two cracks in the doubler with the same origin. It appeared the cracks began in a radius. One crack traveled outboard on the right side approximately .75 inch, and the other crack traveled .5 inch to the left. The skin section crack was approximately 1.75 inches long, traveled from the aft skin edge, and terminated just above the .75 inch crack in the doubler. The bulkhead crack, located at Fuselage Station (FS) 272, extended .375 inch down the radii area at the top left corner.

The submitter did not offer a cause for this damage; however, he reported the aircraft was used in a training environment.

Part total time-7,584 hours.

Beech; Model C90A; King Air; Defective Engine Heat Duct; ATA 3020

During a scheduled inspection, the technician discovered the right engine flexible heat duct on the left exhaust stack was broken.

The heat duct (P/N 90-910100-17), that supplies hot air to the inlet lip for deicing, was broken at the lower end adjacent to the junction of the flexible and the end fitting of the duct.

This condition creates a very serious fire hazard and could endanger the aircraft flight safety. All those concerned should inspect the engine hot air ducting for condition and security at every opportunity.

Part total time-992 hours.

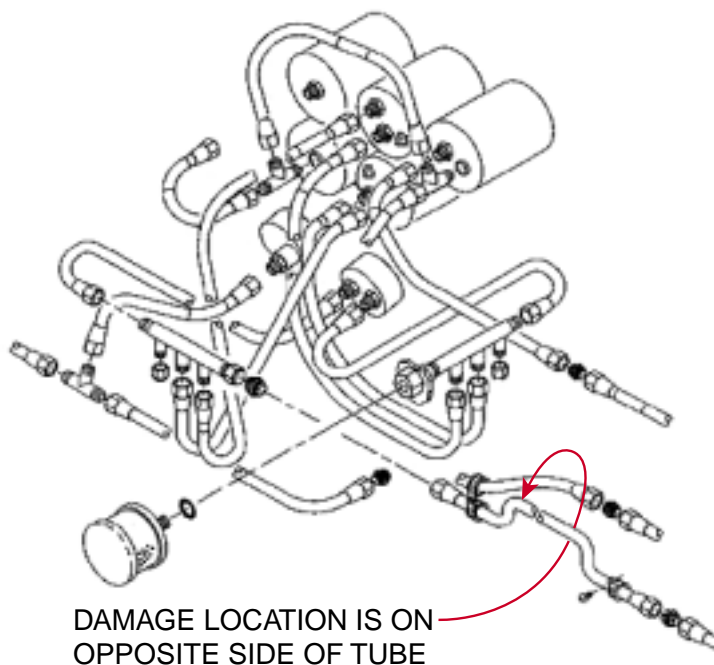
Beech; Model C90B; King Air; Defective Vacuum System Distribution; ATA 3710

After returning from a flight, the pilot reported a loss of vacuum.

A technician investigated the problem and found an aluminum line (P/N 101-320266-1) was chafing against the radar unit installed in the instrument panel. The chafing action had penetrated the line wall thickness causing it to leak. He speculated this problem might be responsible for pressurization problems. (Refer to the illustration.)

The submitter did not find support clamps at the center of the line. He suspects vibration caused the line to wear against the radar unit. He suggested inspecting like aircraft for proper clearance and support for the line.

Part total time-2,550 hours.



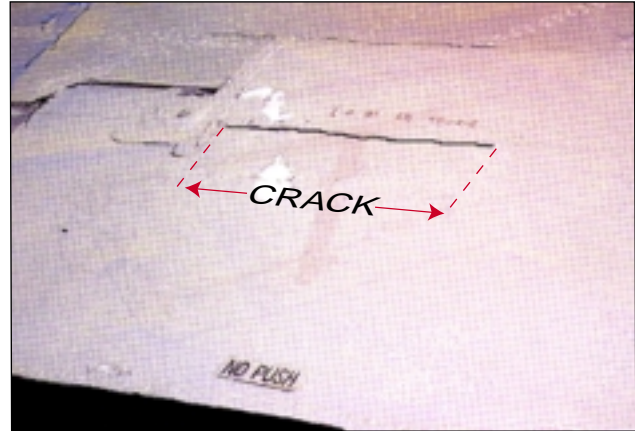
Beech; Model F90; King Air; Aileron Skin Crack; ATA 5751

During a scheduled inspection, the technician discovered a 6-inch crack in the right aileron skin.

The top aileron (P/N 99-130000-617) was very close to complete failure and separation from the aircraft. (Refer to the illustration.)

The aircraft manufacturer issued Service Bulletin (SB) 57-3148, dated January 2001. The SB deals with this subject and makes a repair kit (P/N 109-4011-1) available. The kit includes an improved replacement skin which is designed to prevent this type of failure.

The technician obtained and installed the replacement skin kit. He suggested that the FAA consider using this report as the subject of an Airworthiness Directive.



Part total time-5,981 hours.

Beech; Model A100; King Air; Severe Bleed Air Tubing Corrosion Damage; ATA 3610

During a scheduled inspection, the technician found an instrument bleed air tube was severely corroded.

The tube (P/N 50-970101-15), located in the center section of the left wing, displayed corrosion products and the metal was “blistering.” Using the “ice-pick” test method, the technician could easily puncture the tube. The damaged area is located between 8 and 9 inches inboard of the coupling hose end of the tube.

The submitter suggested giving this area close attention during inspections and maintenance.

Part total time-8,904 hours.

Beech; Model B100; King Air; Uncommanded Engine Shutdown; ATA 7322

While taxiing for takeoff, the flightcrew experienced an uncommanded right engine shutdown. The crew secured the right engine and taxied back to the parking ramp.

The technician discovered a line (P3) (P/N 896547-1) was disconnected from the fuel control. Since there was no apparent damage to the line, he reinstalled it and tightened it to the proper torque. The “B-nut,” used to attach the P3 line to the fuel control, has no provision for safety or security.

The submitter speculated the line was not properly torqued when it was installed during a recent engine assembly.

Part total time-103 hours since engine assembly.

Beech; Model 1900; Airliner; Center Wing Spar Corrosion; ATA 5341

During a scheduled inspection, the technician found corrosion on the forward side of the main wing center section spar cap. The corrosion was located in the “bond assembly” area of the lower spar cap.

The damaged area is located under the cabin floor. The corrosion was found on the forward face of the spar cap (P/N 118-100029-9) and was distributed across the area.

The submitter operates a fleet of seven like aircraft and has inspected them for similar corrosion. All seven aircraft displayed varying amounts and stages of corrosion at the same location. The corrosion damage on one aircraft required him to replace the spar cap.

The submitter recommended the manufacturer issue corrosion preventive measures to inhibit corrosion in this area. He also suggested that adequate water drains be installed just forward of the spar cap to eliminate moisture buildup in this area. At this time, no drains are authorized or installed. He suggested that all operators of like aircraft conduct an inspection of this area for corrosion as soon as possible and report the findings via FAA Form 8010-4, Malfunction or Defect Report.

Part total time not reported.

CESSNA**Cessna; Model 172R; Skyhawk; Defective Cowling Mounts; ATA 7110**

This report was received from an FAA Certified Repair Station which operates a fleet of 16 like aircraft.

During inspections, technicians often find one or more defective cowling shock mounts (P/N J7444-36). Since February 2000, this operator has replaced 85 cowling mounts. The defects that are usually found are rubber tearing or separating from the mounting plate and deterioration. With the new Model 172 aircraft, the cowling mounts were changed to a “thinner” design.

The submitter suggested that the manufacturer consider returning to the use of the heavier cowling mount design.

Part total time-350 hours.

Cessna; Model 172RG; Cutlass; Landing Gear Failure; ATA 3230

During a check ride, the right main landing gear failed to extend. The pilot reached out the entry door and physically pulled the gear into the locked position. After a safe landing, he summoned maintenance personnel.

While investigating, the technician discovered the splined section of the landing gear pivot (P/N 2441100-10) was twisted and separated from the remainder of the pivot.

Cessna Service Bulletin (SB) 90-1 and Airworthiness Directive (AD) 2001-06-06 deal with the landing gear pivot problem. Service Bulletin 90-1 was complied with approximately 3-years prior, and the left main gear pivot was replaced at that time. Cessna SB 90-1 offers an improved pivot assembly to replace ones found defective. Airworthiness Directive 2001-06-06 was not issued until after this incident occurred.

The submitter believes AD 2001-06-06 should be amended to include repetitive pivot assembly inspections instead of the one-time inspection now required.

Part total time-2,800 hours.

Cessna; Model 182; Skylane; Insufficient Elevator Travel; ATA 2730

While conducting a scheduled inspection, the inspector discovered the elevator up travel was insufficient.

The elevator traveled 19 degrees up; however, and the FAA Type Certificate Data Sheet requires 25 degrees up travel. The technician discovered a directional gyro unit was mounted directly above the control column. As the control column was pulled aft, a bolt (P/N AN3-10A) contacted the directional gyro and stopped the elevator travel.

The maintenance records indicate the directional gyro unit was installed in 1993. The aircraft owner stated, "The aircraft was always hard to make a good landing." The submitter asked the following question, "Had no mechanic checked the control travel since then?"

Part total time not reported.

Cessna; Model 182Q; Skylane; Wing Flap Damage; ATA 5750

During a postflight inspection, a technician found a long tear in the left wing flap (P/N 0523901-33) skin.

The upper flap skin was broken a distance of approximately 10.25 inches at the trailing edge. Also the upper and lower flap skins were cracked around several of the trailing edge fasteners outside the broken section. (Refer to the illustration.)

Although the exact cause of the damage could not be determined, the submitter speculated the wing flaps were deployed at excessive airspeeds. Also, the aircraft was being used for glider towing operations on the flight prior to the discovery of this damage.



Part total time-2,401 hours.

Cessna; Model 195; Defective Aileron Hinge Brackets; ATA 2710

During an annual inspection, the technician discovered severe corrosion on the aileron hinge brackets.

The hinge brackets (P/N 0322709-1) are constructed of magnesium. The technician stated it is common to find severe corrosion and cracking at the mounting feet and the main bearing boss. He suggested conducting a "dye-penetrant" inspection on these parts during each annual inspection. Even if the hinge brackets appear serviceable, they should be stripped of paint and given a rigorous inspection.

There are numerous 190 and 195 models still in service after many years in service, and these older aircraft deserve and require our close attention during inspections and maintenance.

Part total time-3,800 hours.

Cessna; Model T206H; Turbo Stationair; Oil Hose Damage; ATA 8120

During the first scheduled inspection since this aircraft was new, a technician found the turbocharger oil hose damaged.

The hose assembly (P/N LW12798-4S274) had been routed next to an engine exhaust system component and was severely burned and leaking. He stated that failure of the oil hose would cause loss of engine oil and possibly engine failure.

Technicians and inspectors should be aware of the possibility of finding this defect on other like aircraft.

Part total time-110 hours.

Cessna; Model 206H; Stationair; Defective Rudder Trim Rigging; ATA 2721

The pilot returned from a flight and reported the aircraft required excessive left rudder pedal input to maintain straight flight.

The technician found the rudder trim chain, tension adjustment idler sprocket (P/N 1260642-1) slipped in the adjustment slot. The trim chain jumped out of position on the steering bungee gear causing limited left rudder trim.

This condition could lead to a serious safety of flight hazard. The submitter recommended that maintenance personnel use due diligence when inspecting and maintaining this, as well as other, flight control systems.

Part total time-424 hours.

Cessna; Model 340A; Wheel Brake Leak; ATA 3242

The aircraft returned from a flight, and a technician found hydraulic fluid on the fuselage lower skin.

Investigating further, he discovered the aluminum line (P/N 5300116) carrying fluid to the right wheel brake was leaking. The line was chafing against a heat duct and was leaking at a pinhole in the chafed area. He stated it appeared the leak was accelerated by corrosion at the chafed area. This defect could cause loss of braking action on the right side and create a safety hazard.

The submitter installed a new brake line, routed it to provide adequate clearance, and installed antichafing protection. He suggested giving this area close scrutiny during scheduled inspections.

Part total time-3,792 hours.

Cessna; Model 414A; Chancellor; Aileron Anomaly; ATA 2710

While conducting an inspection, the technician noticed the right aileron was not streamlined with the trailing edge of the wing.

The outboard end of the aileron was approximately .25 inch high when the inboard end was even with the trailing edge of the wing. After further inspection, the technician discovered the outboard aileron hinge bracket (P/N 5021002-13) was an incorrect part for this installation. The hinge bracket part number indicated was intended for installation on the left aileron.

The aircraft maintenance records revealed the incorrect hinge bracket was installed during a previous wing repair. The submitter stated the manufacturer's parts catalog has an error, which led to installation of the incorrect part.

Part total time not reported.

Cessna; Model 560; Citation; Flight Control Interference; ATA 2700

The pilot reported that after takeoff, he climbed to 38,000 feet. Approximately 10 minutes later, he noticed the autopilot disengaged, and the flight controls felt jammed. After applying considerable pressure to the control column, the flight controls broke free and operated properly.

When the aircraft was parked on the ramp, maintenance personnel investigated this occurrence. As a technician removed an access panel (321 ABC) approximately 1 gallon of water poured out. Prior to the flight, the aircraft was parked outside during a heavy rainstorm. The rainwater accumulated inside the panel, froze at altitude, and the ice constricted the flight control cables.

The rib at fuselage station (FS) 449 does not have a drain hole at the bottom to allow accumulated water to flow forward to the fuselage drain ports. Cessna engineering authorized the technician to drill a drain hole at the bottom of the rib to eliminate accumulated water through the fuselage drain ports.

Aircraft total time-235 hours.

DIAMOND

Diamond; Model DA-20-A1; Nose Landing Gear Cracks; ATA 3222

During a preflight inspection, the pilot found the nose landing gear fork cracked.

Both sides of the nosewheel fork (P/N 20-3220-00-16) were cracked through approximately 75 percent of their width. The cracks were obscured by paint and the wheel pant installation.

The nosewheel fork assembly was in imminent danger of complete failure and separation from the aircraft. The submitter speculated a hard landing or a “nosewheel-first landing” caused the wheel fork cracks.

Aircraft total time-1,195 hours.

DASAULT

Dasault; Model AMD-10; Falcon; Hydraulic System Failure; ATA 2913

While starting the right engine, the flightcrew heard an unusual noise, that lasted approximately 30 seconds. They noticed the “HYD 2” light was illuminated and the pressure indicator was at “zero.” The crew shutdown the aircraft and summoned maintenance personnel.

The technician removed the right engine-driven hydraulic pump (P/N ABEX 40053-03) and discovered the drive shaft was intact; however, it rotated with little or no resistance. It was evident to the technician that the pump had failed internally. He did not disassemble the pump to determine the cause of the internal failure.

The “time-before-overhaul (TBO)” for the hydraulic pump is 3,000 hours of operation. The submitter stated this pump “rarely” reaches TBO.

Part total time-789 hours.

ERCOUPE

Ercoupe; Model 415C; Altimeter Failure; ATA 3416

During the first flight after the installation of a newly overhauled altimeter, the instrument failed. The pilot noticed the “100-foot” indicator needle had stopped working.

A technician removed the (Kollsman) altimeter and noticed the shaft for the “100-foot” needle had disengaged internally. By tilting the altimeter in one direction, he could cause the shaft to re-engage with the internal mechanism. Tilting the altimeter in the opposite direction (simulating an aircraft climb attitude) caused the needle to disengage again.

An FAA certified repair station overhauled the altimeter. The instrument was returned to the overhaul shop, and at the time of this report, the cause of this defect had not been determined.

Part total time since overhaul-1 hour.

GRUMMAN AMERICAN**Grumman American; Model AA-5A; Cheetah; Wing Structural Damage; ATA 5712**

While performing other maintenance on the left wing fuel tank, the technician found a buckled wing rib at the aft end of the rib at wing station (WS) 66.

The aircraft owner related that the aircraft had suffered previous structural damage when an insect nest plugged the left wing fuel tank vent. After the flight, the pilot noticed the skin covering the left fuel tank area was distorted. The insect nest was cleaned out. However, it was evident there was no effort to evaluate the aircraft damage. This aircraft has been operating approximately 7 years since the previous damage occurred.

The submitter reminds us that after repairing “obvious” damage, it is important to thoroughly inspect the area for “hidden” damage.

Part total time-4,247 hours.

PIPER**Piper; Model PA 23-160; Apache; Cabin Entry Door Defect; ATA 5210**

The pilot reported the cabin entry door came open in flight causing him to lose directional control of the aircraft. He regained directional control and landed the aircraft safely.

During an investigation, a technician discovered the cabin door latch assembly would not lock the door securely. The latch did not properly engage with the doorjamb and allowed the door to “pop” open during the flight. Giving the door latch assembly proper adjustment and lubrication should prevent recurrence of this defect.

Part total time not reported.

Piper; Model PA 23-160; Apache; Wing Structural Defect; ATA 7120

While performing other maintenance on the right engine, a technician discovered the engine mount truss was broken.

The engine mount truss (P/N 17137-01) consists of steel tube construction. It seemed obvious to the technician that the failure was caused by severe corrosion. The corrosion was concentrated inside of the steel tube of the truss.

Because of the severity of the corrosion damage, the submitter recommended replacing the entire landing gear/engine truss assembly. He recommended giving this area close attention during scheduled inspections and maintenance.

Part total time not reported.

Piper; Model PA 24; Commanche; Engine Exhaust Stack Broken; ATA 7810

During a flight, the pilot experienced a complete loss of engine power and was unable to regain power. He made a safe and successful off-airport landing.

The technician discovered the right rear engine exhaust stack (P/N 21092-17) was broken inside the carburetor heat muff. When the broken exhaust stack dropped down and chafed a hole in the heat muff, hot engine exhaust gasses entered the engine compartment. As a result, the insulation melted on the "P-lead" wires, that shorted to ground, causing the engine to fail.

The submitter suggested that when the carburetor heat muff is opened during annual inspections, a small mirror should be used to check the area where the exhaust stack is welded to the heat muff.

Aircraft total time-4,053 hours.

Piper; Model PA 28-181; Archer; Defective Alternator Fitting; ATA 2421

While conducting other maintenance in the engine compartment, the technician noticed a broken alternator attachment.

The alternator (P/N ES4032) end plate (P/N ALE1003K) attachment "ear" was broken and separated. The submitter stated, "This is the fifth one in our fleet found with this defect."

The submitter speculated the alternator drivebelt tension might have been excessive and caused or contributed to this failure. Also, the alternator mounting system for this installation may have been a contributing factor.

Part total time-1,710 hours.

Piper; Model PA 31-350; Chieftain; Alternator Failure; ATA 2421

The pilot reported that during a flight, he noticed the left engine alternator warning light illuminated. He attempted to reset the circuit breaker without success. After a safe landing, he summoned maintenance personnel.

While investigating the problem, a technician discovered the positive battery lug was loose. The loose lug allowed the terminal to short to the case ground causing the battery cable insulation to melt, opening the alternator circuit breaker. He replaced the alternator (Electrosystems P/N ALU-8521) and battery cable.

The submitter did not offer a cause for the loose battery cable; but it is currently being investigated.

Part total time-54 hours.

Piper; Model PA 31-350; Chieftain; Defective Cabin Heater; ATA 2140

The aircraft was at the "HOLD SHORT" point on the end of the runway when the control tower notified the pilot of a cloud of smoke coming from the right side of the aircraft.

A technician discovered the smoke was coming from the combustion heater (Electrosystems P/N B4500). He determined the heater had exceeded the high temperature limit and "belched" smoke back through the blower motor inlet. He conducted a decay test on the heater and found it was within

serviceable limits; however, the heater still did not function properly. At this point, he removed and replaced the fuel nozzle and solved the problem. The old fuel nozzle allowed excessive fuel in the combustion chamber, which caused an overtemperature condition and produced the smoke and fumes.

The submitter suggested inspecting the fuel nozzle frequently and, when needed, replacing it to prevent further recurrence of this defect.

Part total time-1,031 hours.

Piper; Model PA 31T-500; Cheyenne; Electrical Short Circuit; ATA 2400

Just after takeoff, the pilot smelled and saw smoke coming from the left main circuit breaker panel. He immediately returned to the departure airport and landed the aircraft safely.

The technician removed the circuit breaker panel (P/N 29371-2) and found severe heat damage. The damage was centered at the attachment clip for the "right windshield heat" circuit breaker. This aircraft uses the "plug in type" circuit breakers. He discovered the small brass rivet, used to attach the clip inside the circuit breaker panel, was not making sufficient contact to carry the required 35 amp electrical load.

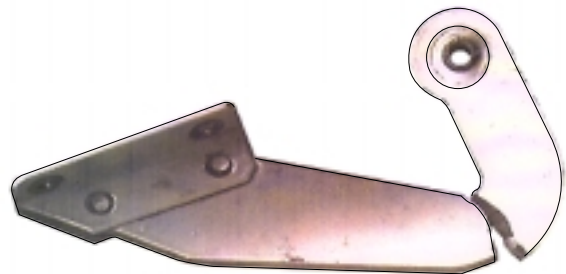
The submitter recommended that operators of like aircraft conduct an inspection for heat damage inside the main circuit breaker panel.

Part total time-3,675 hours.

Piper; Model PA 31T-620; Cheyenne; Landing Gear Door Hinge Broken; ATA 5280

During a postflight inspection, a technician discovered a main landing gear hinge was broken.

The forward left main landing gear outboard door hinge fitting (P/N 42059-07) had failed. (Refer to the illustration.) The technician removed the door and found the rear hinge fitting was cracked in the same area where the forward hinge failed. This finding led the technician to inspect the same door on the right main gear where he also found cracks.



The submitter stated he has found this type of defect on several like aircraft. He recommended giving special attention to the main gear door hinges during inspections. He warned that even a slight paint separation might indicate an underlying crack.

Part total time-5,190 hours.

Piper; Model PA 32-300; Cherokee Six; Electrical System Malfunction; ATA 2400

After returning from a flight, the pilot parked the aircraft and began the shutdown procedure.

When the pilot turned off the master switch, he heard a "pop" that seemed to come from the right side of the instrument panel. None of the circuit breakers were open, but he detected a burning smell and noticed smoke coming from behind the panel just to the left of the circuit breakers. He exited the aircraft and summoned maintenance personnel.

A technician investigated and discovered the rheostat assembly, wiring, and other components of the cabin light electrical circuit were severely burned. He did not explain what caused this defect.

Part total time-15,481 hours.

Piper; Model PA 46-350; Malibu; Landing Gear Actuator Defect; ATA 3230

During a landing approach, the right main landing gear did not indicate “down-and-locked” when the pilot selected the down position. After conducting aerial maneuvers designed to assure the gear was locked down, a “down-and-locked” indication was attained, and the pilot landed the aircraft safely.

After an inspection, a technician checked the right main gear actuator (Parker-Hannafin P/N 89075-005) and adjusted the “down-and-locked” switch in accordance with the proper technical data. After conducting an operational test, the landing gear functioned correctly, and he approved the aircraft for return to service.

On the next flight, the same scenario occurred and terminated with another safe landing.

The submitter believes there is a problem with the servicing information contained in the technical data which contributes to this type of failure. He states, “These actuators have a problem that (proper) routine servicing can prevent.”

Part total time-1,270 hours.

HELICOPTERS

BELL

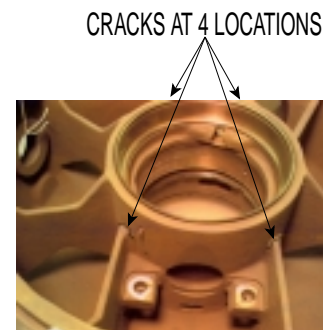
Bell; Model 206B; Jet Ranger; Defective Transmission; ATA 6330

During a scheduled inspection and maintenance, a technician discovered the transmission case was cracked.

The lower transmission case (P/N 206-040-150-029) was cracked at four locations adjacent to the support webs. (Refer to the illustration.)

The submitter did not give a cause for this defect or any further details. It is possible the case cracks were caused by metal fatigue resulting from a high number of operating hours.

Part total time-7,457 hours.



Bell; Model UH-1H; Huey; Main Rotor Blade Defect; ATA 6210

This helicopter is operated by the U.S. Forestry Service as a "Public Use Aircraft."

During a postflight inspection, a technician discovered a small dent in the main rotor blade.

The dent was aft of the spar on the top of the blade. The technician found a crack inside the dent. He removed the paint and discovered the crack traveled approximately 6 inches.

The submitter gave no cause for this defect.

Part total time-1,649 hours.

EUROCOPTER**Eurocopter; Model BK-117B1; High Frequency Vibration; ATA 6310**

While preparing for a flight, the pilot brought the number one engine up to ground idle and started the number two engine. When the pilot brought the number two engine to ground idle, he felt a "thud" and a severe high frequency vibration. He immediately shut down both engines.

The pilot and a technician inspected the engine compartments and found that the drive shaft, that goes from the number two engine to the transmission (P/N 117-12005.01H6), was bent and twisted.

The technician contacted and explained the problem to the manufacturer's technical support representative. The manufacturer's representative offered his opinion that the clutch (P/N 4639 202 011) did not engage until the number two engine was at ground idle causing twisting and bending of the drive shaft when it was finally engaged.

Part total time since overhaul-80 hours.

McDONNELL DOUGLAS**McDonnell Douglas; Model 369D; Oil Cooler Blower Failure; ATA 7921**

During shutdown procedures, the pilot heard a loud grinding and popping sound that seemed to come from the transmission area.

A technician removed and disassembled the oil cooler blower assembly (P/N 369D25630-101) and discovered the lower blower bearing (P/N 369A5655-3) had failed. He suspected the bearing cage failed first followed by the remainder of the bearing.

The manufacturer established a 1,200 hour life limit for the blower bearing. In this case, the bearing failed at less than half the life limit time expended.

Part total time-515 hours.

ROBINSON

Robinson; Model R-22; Mariner; Tail Boom Separation; ATA 6510

The Civil Aviation Safety Authority (CASA) of Australia submitted the information for this article. *The article is published as it was received.*

During a run-up prior to takeoff, the tail rotor drive shaft broke and severed the tail boom.

A preliminary inspection indicated the incident was initiated by failure of the tail rotor drive shaft damper. This allowed the drive shaft to whip, fracture, and cut off the tail boom and cause collateral damage to the helicopter. This is not the only incident involving tail rotor drive shaft damper clip failure. The manufacturer issued Service Bulletin (SB) 14, dated October 1981, which changed the material in the arm from aluminum to steel. In addition, Robinson issued SB 20, dated May 1982, which calls for a run-up inspection and friction test of the damper each 100-hours of operation.

CASA inquired of the FAA their intentions to issue an Airworthiness Directive concerning this anomaly and require compliance with SB 20.

Helicopter total time not reported.

Robinson; Model R-44; Astro; Poor Engine Performance; ATA 7414

While preparing for a flight, the pilot started the engine and performed a check of the magnetos. When he selected the “left” magneto position, the engine quit. He restarted the engine with the magneto switch in the “both” position, and the engine began backfiring and running very poorly.

The pilot told the technician that this helicopter “had a history of difficult starting.” The technician checked the magneto (TCM P/N 10-600616-200) timing and noticed the left magneto would only turn intermittently with the engine. After further investigation, he discovered the “Woodruff” key slot in the pinion gear (P/N 10-157120Y) was severely worn. Over half of the material between the gear inside diameter and the gear teeth grooves was worn away, and the magneto case was filled with debris.

The magneto had been tested and repaired by a certified maintenance shop 224 hours prior to this occurrence.

Part total time since overhaul-1,396 hours.

AMATEUR, EXPERIMENTAL, AND SPORT AIRCRAFT

LONGEASY

Long Easy; Model CB540; Canopy Failure; ATA 5210

During a flight, the canopy separated from the aircraft which resulted in an incident with minor damage to the aircraft but no personal injuries.

The inspector examined the frame and the remains of the canopy and determined the latch assembly had failed.

The submitter gave no further details concerning this incident.

Aircraft total time not reported.

HOT AIR BALLOONS

THUNDER & COLT

Thunder & Colt; Burner Model C-3T; Magnum; Defective Fuel Distribution Block; ATA 5102

This balloon uses a Balloon Works envelope and a Thunder & Colt gondola and burner.

While setting up for a flight, the pilot detected a fuel odor when the fuel system was pressurized. An investigation disclosed the fuel distribution block (P/N F8209) was severely corroded and some of the material was eroded.

The fuel distribution block is machined from aluminum and is used to route fuel from the blast valve to the pilot light, crossover, and coils. The block is secured by four threaded holes in the corners of the assembly. The erosion of the aluminum material had progressed to the point that one of the fastener holes was missing. (Refer to the illustration.)

The submitter could not determine the cause of the damage; however, for corrosion to progress to this state, would require either a long period of time without detection or exposure to a corrosive material.



Part total time not reported.

POWERPLANTS AND PROPELLERS

TEXTRON LYCOMING

Textron Lycoming; Model O-320; Faulty Cylinder Security; ATA 8530

While repairing an engine oil leak, the technician discovered three broken hold-down studs (P/N 50-15P07) on the number one cylinder.

After further investigation, the technician found that all but two on the remaining hold-down stud nuts had backed off the threads. He believes the entire cylinder was in imminent danger of separating from the engine case. He checked the hold-down stud nuts on both engines and discovered they were below the required torque value.

The submitter suggested conducting at least a random check of the hold-down stud nuts for proper torque at every opportunity.

Part total time not reported.

ACCESSORIES

AIRCRAFT TIRE ANOMALY

Piper; Model PA 12; Super Cruiser; Main Landing Gear Tire Anomaly; ATA 3244

The aircraft owner asked a technician to replace the main landing gear tires.

The technician mounted two new tires (Goodyear P/N 856C61-3), size 8.50 by 6 on identical Cleveland wheels. When he noticed something “just didn’t look right,” he investigated further. After he inflated each tire to 25 PSI, he noticed one tire appeared larger than the other tire. He measured the diameter of both tires and found a difference of .8125 inch. One of the tires had a diameter of 20.125 inches, and the other tire diameter was 20.9375 inches.

After a bit of research, the technician discovered the tire specifications furnished to the FAA by Goodyear, in accordance with Technical Standard Order (TSO) C62D, indicate the diameter limits for this tire are 21.15 inches minimum and 22.85 inches maximum. Therefore, the smaller diameter tire was below the minimum diameter limit.

It seems odd to the submitter that the diameter tolerance is so great. Accordingly, one tire could be 1.7 inches smaller in diameter than the other and still be within the tolerance limits.

Part total time not applicable.

AIRNOTES

INSTALLATION OF RETROFIT SHOULDER HARNESES

This has been the subject of many debates among aviation folks (including FAA personnel) for many years. Can I do the installation legally? Is it a major or minor alteration? Can I get a field approval? Is there a Supplemental Type Certificate (STC)?

Well, the FAA has clarified at least some of the points of conjecture by issuing Policy Statement (PS) number ACE-00-23.561-01, dated September 19, 2000. This 17-page document goes a long way in clearing up some of the misunderstandings, which have circulated through the industry for many years, mutating as they were passed from one person to another.

The following is an excerpt from PS ACE-00-23.561-01 and is intended for information only. Concerned individuals should obtain the full text of this document before any shoulder harness installation. *This article is published as it was received.*

SUMMARY

A retrofit shoulder harness installation in a small airplane may receive approval by Supplemental Type Certificate (STC), Field Approval, or as a minor change. An STC is the most rigorous means of approval and offers the highest assurance the installation meets all the airworthiness regulations. A Field Approval is a suitable method of approval for a shoulder harness installation that needs little or no engineering. Shoulder harness installations may receive approval as a minor change in certain cases. In such cases, the FAA certified mechanic who installs the shoulder harness records it as a minor change by making an entry in the maintenance log of the airplane.

The FAA does not encourage the approval of retrofit shoulder harness installations as minor changes. The preferred methods of approval are STC or Field Approval. However, the FAA should not forbid the approval of a retrofit shoulder harness installation as a minor change in:

The front seats of those small airplanes manufactured before July 19, 1978, and

In other seats of those small airplanes manufactured before December 13, 1986.

A retrofit shoulder harness installation may receive approval as a minor change in these small airplanes if:

The installation requires no change of the structure (such as welding or drilling holes).

The certification basis of the airplane is 14 CFR part 23 before Amendment 23-20, part 3 of the Civil Air Regulations, or a predecessor regulation.

In addition, a minor change installation should follow the guidance for hardware, restraint angles, and attachment locations provided in:

Advisory Circular (AC) 43.13-2A, Acceptable Methods, Techniques, and Practices Aircraft Alterations.

AC 21-31, Shoulder Harness – Safety Installations.

AC 23-4, Static Strength Substantiation of Attachment Points for Occupant Restraint System Installations.

Installations approved as a minor change may not provide the occupant with the protection required by regulation (Civil Air Regulation (CAR) 3.386 or 14CFR part 23, § 23.0561). However, a properly installed retrofit shoulder harness installation is a safety improvement over occupant restraint by seat belt alone.”

Basically, if the aircraft has the hard-points factory installed and the approved shoulder harness system can be installed without modification of the airframe, it would be a minor change.

The full text of PS ACE-00-23.561-01 is available on the Internet. It is in the “Federal Register” for Thursday, September 28, 2000. The document is listed under “Federal Aviation Administration,” “Notices.”

Printed copies of PS ACE-00-23.561-01 are available by written request to: FAA, Small Airplane Directorate (ACE-111), Room 301, 901 Locust, Kansas City, MO 64106.

ALL AIRWORTHINESS DIRECTIVES ARE ON THE WEB

The FAA, Aircraft Certification and Flight Standards Services are pleased to announce that all Airworthiness Directives (ADs) are now available on the Internet in the Regulatory and Guidance Library (RGL).

The Internet address is: <<http://www.airweb.faa.gov/rgl>>

In addition, you can find the ADs from the FAA homepage by clicking on "FAA Organizations" and then "Aircraft Certification Service."

This improvement should be of great benefit to aircraft owners, operators, technicians, pilots, and other interested persons.

SUBSCRIPTIONS

The Government Printing Office (GPO) distributes this publication. If you have any questions regarding a subscription to this publication, please direct your questions to GPO.

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When you contact GPO, be specific concerning the publication you are interested in (e.g., Advisory Circular 43-16A). GPO accepts payment in the form of checks and credit cards. Please make your checks payable to the *Superintendent of Documents*.

In the past, we furnished the GPO subscription form in this publication. The older issues which contain the subscription form, may not have current pricing information. Since GPO controls price increases, contact GPO for current subscription information.

ELECTRONIC VERSION OF MALFUNCTION OR DEFECT REPORT

One of the recent improvements to the AFS-600 Internet web site is the inclusion of FAA Form 8010-4, Malfunction or Defect Report. This web site is still under construction and further changes will be made; however, the site is now active, usable, and contains a great deal of information.

Various electronic versions of this form have been used in the past; however, this new electronic version is more user friendly and replaces all other versions. You can complete the form online and submit the information electronically. The form is used for all aircraft except certificated air carriers who are

provided a different electronic form. The Internet address is:
<http://av-info.faa.gov/isdr/>

When the page opens, select “M or D Submission Form” and, when complete, use the “Add Service Difficulty Report” button at the top left to send the form. Many of you have inquired about this service. It is now available, and we encourage everyone to use this format when submitting aviation, service-related information.

SERVICE DIFFICULTY PROGRAM DATA ON THE INTERNET

The FAA, Service Difficulty Reporting (SDR) Program is managed by the Aviation Data Systems Branch, AFS-620, located in Oklahoma City, Oklahoma. The information supplied to the FAA in the form of Malfunction or Defect Reports (M or D), Service Difficulty Reports (SDR), or by other means, is entered into the SDR data base. This information has been available to the public through individual written request. This method has provided the aviation public with an invaluable source of data for research or finding specific problems and trends.

The Service Difficulty Reporting Program relies on the support of the aviation public to maintain the high quality of data. AFS-620 has included the SDR data on an Internet web site, which is now available to the public. Using the web site will expedite the availability of information. The Internet web site address is: <http://av-info.faa.gov>

On this web site, select “Aircraft” along the top of the page, next select “Service Difficulty Reporting,” and then select “Query SDR Data.”

This web site is now active; however, it is still under development and improvements are being made. We ask for your patience, ideas, and suggestions. If you find the web site useful, let us know. Also, spread the word about the availability of information on the web site. To offer comments or suggestions, you may contact the web master or call Tom Marcotte at (405) 954-4391.

The data base now includes a more comprehensive search/query tool with provisions for printing reports or downloading data.

Please remember that the information contained in the SDR data base is only as good as the input we receive from the aviation public in the form of SDR and M or D reports. Also, the data used in production of this publication is derived from the SDR data base. In that regard, we solicit and encourage your participation and input of information.

This publication, as well as many other publications, was previously included on the “FedWorld” internet site. The FedWorld site was terminated on April 15, 2000. The data previously listed there is presently being transferred to the “av-info” web site.

ADDRESS CHANGES

In the past, the Designee Standardization Branch (AFS-640) maintained the mailing list for this publication. Now, the Government Printing Office (GPO) sells this publication and maintains the mailing list; therefore, please send your address change to: U.S. Government Printing Office, **ATTN: SSOM, ALERT-2G**, 710 N. Capital Street N. W., Washington, DC 20402

You may also send your address change to GPO via FAX at: (202) 512-2168. If you FAX your address change, please address it to the attention of: **SSOM, ALERT-2G**. Whether you mail or FAX your address change, please include a copy of your old address label, and write your new address clearly.

IF YOU WANT TO CONTACT US

We welcome your comments, suggestions, and questions. You may use any of the following means of communication to submit reports concerning aviation-related occurrences.

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You can access current and back issues of this publication from the internet at: <http://afs600.faa.gov>

When the page opens, select “AFS-640” and then “Alerts” from the drop-down menu. The monthly issues of the Alerts are available back to July 1996, with the most recent edition appearing first.

AVIATION SERVICE DIFFICULTY REPORTS

The following are abbreviated reports submitted between May 22, 2001 and June 15, 2001, which have been entered into the FAA Service Difficulty Reporting (SDR) System data base. This is not an all inclusive listing of Service Difficulty Reports. For more information, contact the FAA, Regulatory Support Division, Aviation Data Systems Branch, AFS-620, located in Oklahoma City, Oklahoma. The mailing address is:

FAA
Aviation Data Systems Branch, AFS-620
PO Box 25082
Oklahoma City, OK 73125

These reports contain raw data that has not been edited. If you require further detail please contact AFS-620 at the address above.

FEDERAL AVIATION ADMINISTRATION

Service Difficulty Report Data

Sorted by Aircraft Make and Model then Engine Make and Model. This Report Derives from Unverified Information Submitted By the Aviation Community without FAA review for Accuracy.

ACFTMAKE ACFTMODEL REMARKS	ENG MAKE ENG MODEL	COMPMAKE COMPMODEL	PARTNAME PART NUMBER	PART CONDITION PART LOCATION	DIFF-DATE OPER CTRL NO.	T TIME TSO
	IAE	SEAL	CRACKED	04/25/2001		
	V2500A1	2A0847	NR 4 BEARING	20010511CW003		
PART RECEIVED FOR PENETRANT INSPECTION. PART REJECTED AT PENETRANT INSPECTION FOR INDICATION IN COUNTERBORE.						
BBAVIA	CONT	SPAR	CRACKED	04/13/2001		
7EC	C9012F		RT WING	20010509CW009		
IN RECOVERING AIRFRAME, FOUND CRACK IN RIGHT WING REAR SPAR. AIRCRAFT WRECKED IN A NOSE OVER. NO LOG RECORD OF REPAIR TO REAR SPAR.						
BEECH	CONT	STABILIZER	BENT	04/18/2001		4195
95B55	IO470*	95620010634	RIGHT	20010514CW004		
DURING INSTALLATION OF RIGHT HAND ELEVATOR, IT WAS DISCOVERED THAT WHEN THE ELEVATOR WAS MOVED FROM FULL DOWN TO FULL UP, THE STABILIZER WOULD FLEX UPWARD. 4375. INVESTIGATION DISCLOSED THAT THE STABILIZER WAS BENT DOWN 2 DEGREES AT THE CENTER HINGE(BOTH SPARS) A TRIPLE PATCH WAS FOUND ON THE LOWER REAR SKIN, STARTING 12 INCHES FROM THE TIP. NO RECORD OF THIS REPAIR CAN BE FOUND IN THE AIRCRAFT RECORDS. CORRECTIVE ACTION: REMOVED AND REPLACED STABILIZER.						
CESSNA		YOKE	CORRODED	05/01/2001		3057
172L		051178217	COCKPIT	20010523CW001		
AIRCRAFT ON FINAL APPROACH, CONTROL YOKE FAILED AT APPROX 30 FT AGL. CONTROL YOKE FAILED JUST ABOVE PIVOT POINT BEHIND INSTRUMENT PANEL. CONTROL YOKE WAS EXTREMELY CORRODED AT FRACTURE POINT.						
CESSNA		PISTON	BROKEN	04/13/2001		10388
172RG		98820041	MLG ACTUATOR	20010508CW016		
PISTON IN MAIN GEAR ACTUATOR BROKEN AT SECOND TOOTH FROM END. THIS LEFT GEAR TO SWING FREELY, NOT LOCKING DOWN.						
CESSNA	LYC	ALTERNATOR	SEIZED	04/27/2001		
177	O360*	DOFF10300J	ENGINE	20010517CW009		126
ALTERNATOR OVERHAULED, INSTALLED ON AC. FRONT BEARING BALL CAGE BROKE APART AND ALLOWED BALLS TO COLLECT ON ONE SIDE OF BEARING, LOCKING THE ALTERNATOR SHAFT. FAILURE OCCURRED ON 2/10/2001 AFTER 126 HOURS TSOH.						
CESSNA		BULKHEAD	CRACKED	04/23/2001		4787
182L		07126161	FUSELAGE	20010511CW008		
FAILED INSPECTION DUE TO CRACKS IN CRITICAL AREAS, REPLACED.						
CESSNA	CONT	VENT LINE	CHAFED	10/20/2000		871
185F	IO520*		FUEL SYSTEM	20010509CW008		
DURING AN ANNUAL INSPECTION, THE FLEXIBLE FUEL VAPOR VENT LINE WAS FOUND CHAFED AGAINST THE POSITIVE BATTERY CABLE WHICH SUPPLIES POWER TO THE STARTER CONTACT SOLENOID. UPON REMOVAL, THE FUEL LINE SHOWED EVIDENCE OF ARCHING AND THE STEEL OUTER BRAIDING WAS BURNED AWAY. THE INSULATION ON THE BATTERY CABLE WAS WORN AWAY AND BARE WIRE WAS EXPOSED. PROBABLE CAUSE: IMPROPER FUEL LINE, BATTERY CABLE ROUTING, PROTECTION, AND ENGINE TO FIREWALL CLEARANCE LIMITATIONS.						
CESSNA	CONT	THROTTLE	OUT OF ADJ	04/13/2001		280
188B	IO520*	6397172	ENGINE	20010508CW019		280
THROTTLE BODY AND METERING UNIT WAS FOUND TO BE OUT OF ADJUSTMENT, DURING INSPECTION THE CONTROL ARM AT THROTTLE BODY WAS FOUND LOOSE AND ROTATING ON SHAFT. NO ADJUSTMENT OF IDLE MIXTURE OR IDLE COULD BE PERFORMED DUE TO CHANGING CONDITION BETWEEN THROTTLE BODY AND METERING UNIT.						
CESSNA		CONTROL	BROKEN	03/27/2001		367
210L		C29950J0101	ENGINE	20010525CW007		
ENGINE STARTED TO SPAR DOWN IN FLIGHT. PILOT ATTEMPTED TO ADJUST MIXTURE, AFTER TURNING ON THE BOOST PUMPS. PILOT STATED, THE MIXTURE CABLE WAS LOOSE IN HIS HAND. ENGINE SHUT DOWN AND AIRCRAFT WAS LANDED , GEAR UP IN A FIELD. UPON EXAMINATION, THE MIXTURE CABLE WAS FOUND BROKEN AT THE POINT IT ENTERED THE PROTECTIVE BARREL OF THE ROD END. CORROSION WAS EVIDENT.						
CESSNA	CONT	GEAR	WORN	04/23/2001		725
337H		632617D	VACUUM PUMP	20010529CW007		
A DETAINED INVESTIGATION OF THE STARTER DRIVE REVEALED THAT ALL OF THE GEAR TEETH WERE WORN EXCESSIVELY ON ONE OF THE BEVEL GEARS WHICH DRIVES THE VACUUM PUMP.						
CESSNA		SCREW	DAMAGED	04/20/2001		4803
414		08411132	MLG	20010529CW010		
UPON ANNUAL INSPECTION, FOUND ADJUSTING SCREW PN 0841113-2, THREADS AT THE POINT OF PULLING OUT OF EYE BOLT END FITTINGS, PN 0841111-3. THIS IS THE 4TH DISCOVERY OF ADJUSTING SCREW AT THE POINT OF FAILURE WHICH, IF NOT HAD BEEN CORRECTED, WOULD BE IMMINENT GEAR FAILURE, SINCE THIS IS THE ONLY ITEM LOCKING THE MAIN GEAR INTO POSITION AFTER EXTENSION.						
CESSNA		SCREW	DAMAGED	04/05/2001		4803
414		08411113	MLG	20010529CW011		
UPON ANNUAL INSPECTION, FOUND ADJUSTING SCREW, PN 0841113-2, THREADS AT THE POINT OF PULLING OUT OF EYE BOLT END FITTINGS, PN 0841111-3. THIS IS THE 4TH DISCOVERY OF ADJUSTING SCREW AT THE POINT OF FAILURE WHICH, IF NOT HAD BEEN SINCE THIS IS THE ONLY ITEM LOCKING THE MAIN GEAR INTO POSITION AFTER EXTENSION.						
GULSTM	LYC	CYLINDER	FAILED	05/07/2001		3800
114ARKWELL	TIO540*	48838503	NLG	20010514CW003		
NOSE GEAR ACTUATING CYLINDER, PN 48838503, FAILED INTERNALLY, CAUSING NOSE GEAR COLLAPSE, RESULTING IN MINOR DAMAGE TO AIRCRAFT.						
HELIO		BEARING	CRACKED	02/06/2001		3782
H295		3910104044	TORQUE TUBE	20010523CW005		
TORQUE TUBE BEARING MADE FROM NYLON MATERIAL HARDENS WITH AGE AND DURING OPERATION OF SLAT TORQUE TUBE. THE BEARING STARTS TO CRACK AT RIVET HOLES THAT ATTACHES IT TO WING RIB. REPLACED WITH						

HELIO		BEARING	CRACKED	02/06/2001	3782
H295		3910104046	TORQUE TUBE	20010523CW006	
TORQUE TUBE BEARING MADE FROM NYLON MATERIAL HARDENS WITH AGE AND DURING OPERATION OF SLAT TORQUE TUBE THE BEARING STARTS TO CRACK AT RIVET HOLES THAT ATTACHES IT TO WING RIB. REPLACED WITH					
MOONEY		GYRO	CONTAMINATED	04/30/2001	4315
M20F			COCKPIT	20010518CW001	2383
DURING ANNUAL INSPECTION, FOUND LIQUID IN WINDOW OF GYRO, DISCONNECTED LINE TO HAVE WATER FLOW OUT, REMOVED INSTRUMENT. OPENED CASE AND FOUND LONG-TERM CORROSION ON ALL INTERNAL PARTS. REPLACED WITH OVERHAULED INSTRUMENT. NO OTHER INSTRUMENTS CONTAINED WATER MAY HAVE GOTTEN WATER THROUGH A LEAKING EXTERIOR COWL DECK.					
MOONEY	CONT	THROTTLE	WORN	04/27/2001	55
M20R	IO550*	63255555	ENGINE	20010524CW001	
WHILE WARMING THE ENGINE FOR OIL CHANGE, NOTED THAT THERE WAS AN EXCESSIVE AMOUNT OF FREE PLAY IN THE THROTTLE LINKAGE. AFTER RUNNING THE ENGINE UP TO 1500 RPM, PULLED THROTTLE BACK TO IDLE, BUT THE ENGINE RPM DID NOT DECREASE. HAD TO USE THE MIXTURE CONTROL TO STOP ENGINE. INSPECTED THROTTLE LINKAGE AND FOUND THE THROTTLE ARM WAS LOOSE ON THE SHAFT. TORQUE SEAL ON THE ATTACHING NUT WAS NOT BROKEN AND NUT DID NOT APPEAR TO HAVE MOVED SINCE INSTALLATION. REMOVED THE THROTTLE ARM AND. FOUND THE SERRATIONS ON THE ARM WHERE THE ARM MEETS THE THROTTLE SHAFT WERE WORN AWAY. ATTACHING NUT WAS NOT TIGHTENED PROPERLY AT INSTALLATION. MFG SUPPLIED NEW THROTTLE ARM,					
NAVION		CONTROL	FRAYED	05/25/2001	
L17A		1455201029	ELEVATOR	20010525CW006	
UPON REMOVAL OF CABLE, FOUND FRAYED SECTION LOCATED AT THE LOWERMOST POINT EXITING THE PULLEY. PROBABLE CAUSES INCLUDE ENVIRONMENTAL DAMAGE (WHEEL WELL AREA) AND TIME. AS PART OF ANNUAL, ALL CABLES IN THIS AIRCRAFT WERE BEING REPLACED DUE TO OVERALL AGE AND CONDITION WHEN THIS PROBLEM WAS					
NAVION		CONTROL	FRAYED	05/25/2001	
L17B		145520101	AILERON	20010525CW005	
UPON REMOVAL OF CABLES, FOUND FRAYED SECTION LOCATED JUST OUTBOARD OF THE AILERON ROLLERS (MID-WING ABOVE THE MAIN LANDING GEAR TRUNION). PROBABLE CAUSES INCLUDE ENVIRONMENTAL DAMAGE, TIME, AND INADEQUATE MAINTENANCE OF ROLLERS. ROLLERS IN THIS AREA OF THIS AIRCRAFT WERE FROZEN. CABLES HAD BEEN COATED WITH GREASE IN THIS AREA OVER THE YEARS AND FORMED A SEMI-HARD SHELL WHICH COULD HAVE TRAPPED MOISTURE LEADING TO THE DAMAGE. RECOMMENDATIONS ARE TO MAINTAIN CABLES AND ROLLERS PROPERLY ESPECIALLY IN HARD TO REACH AREAS, AND THAT CABLES HAVE A FINITE LIFETIME.					
PIPER		FUEL TANK	BROKEN	05/08/2001	
PA23250		STCSA1480WE	WING TIP	20010529CW003	
FIBERGLASS WINGTIP FUEL TANK STC SA1480WE HAS AN EDGE DISTANCE OF .2500 INCH SCREW HOLES WHICH BROKE FIBERGLASS OUT CAUSING THE WINGTIP TO FALL OFF, WHILE AIRCRAFT WAS ON GROUND. FIBERGLASS TIP DOES NOT HAVE SUFFICIENT STRENGTH DUE TO FIBERGLASS THICKNESS AND EDGE DISTANCE.					
PIPER	LYC	TUBE	DEFECTIVE	03/08/2001	
PA28140	O320*	69623004	STABILIZER	20010510CW001	
ON THE TUBE, WHERE BOLT HOLE IS DRILLED THAT MOUNTS TO THE FRONT BRACKET ON STABILATOR, A HOLE IS IN TUBE, (90 DEGREE ANGLE TO THE BOLT HOLE). IT APPEARS THIS HOLE HAS SLAG IN IT AND SLAG EXIST ON INTERIOR OF THE TUBE THAT HAS BEEN THERE WHEN THE PART WAS FABRICATED. THIS EXTRANEIOUS HOLE IS AT THE HIGH STRESS POINT IN THE TUBE AND HAS NOT BEEN ON ANY OF THE TUBES THAT HAVE BEEN INSPECTED FOR THE AD ON THE TUBES. HOLE WAS FOUND WHEN REMOVING THE THICK LAYER OF BLACK PAINTDOWN TO THE ZINC CHROMATE IN AREA THAT FITS INTO THE STABILATOR BRACKETS. THE AREA FIRST APPEARED AS A BLACK DOT OF PAINT AND CLOSER EXAMINATION REVEALED A HOLE HAD BEEN DRILLED AND FILLED WITH SOME TYPE OF MATERIAL AND					
PIPER		CONTROL	FRAYED	05/02/2001	6559
PA28161		62701113	STABILATOR	20010529CW001	
LEFT FORWARD STABILATOR CABLE WORN AND FRAYING AT SPAR FAIRLEAD AND REAR SPAR PULLEY. DIFFICULT TO DETECT WITHOUT REMOVING CABLE.					
PIPER		FORK	SHEARED	04/17/2001	
PA28181		6528000	NLG STRUT	20010511CW002	
THE AIRCRAFT WAS DOING A TOUCH AND GO, WHEN THE NOSE WHEEL STARTED TO SHIMMY. THE NOSE WHEEL FORK SHEARED OFF FROM THE LOWER STRUT TUBE. COULD NOT TELL IF THERE WAS A PREVIOUS CRACK IN THE TUBE.					
PIPER	LYC	PRECISION	FLOAT	DAMAGED	04/19/2001
PA28181	O360A4M	30802	CARBURETOR	20010511CW014	
DURING OVERHAUL THE CARBURETOR FLOAT WAS FOUND WITH ONE OF THE CHAMBERS HALF FULL OF 100 LOW					
PIPER		CONTROL	OUT OF RIG	03/26/2001	460
PA28R201		6270147	STABILIZER	20010509CW002	290
TRIM CABLE JACKSCREW STOP PIN NOT CONTACTING TRIM DRUM BEFORE TURNBUCKLE FERRULE REACHING AFT PULLEY AND CABLE GUARD, PREVENTING CABLE FROM MOVING. AC WAS IN FULL NOSE TRIM CONDITION, AC LANDED WITHOUT INCIDENT. TRIM CABLES WERE RE-RIGGED.					
PIPER	LYC	RUDDER HORN	CRACKED	02/26/2001	4374
PA30	IO320B1A	2344715	RUDDER	20010525CW001	
REMOVED HORN DUE TO WEAR BETWEEN HORN AND RUDDER. FOUND CRACKS FROM MOUNT HOLES TO TOP OF RUDDER HORNS OF SAME PART NUMBER TO BE CRACKED IN A SIMILAR FASHION.					
PIPER	LYC	STUD	FRACTURED	05/11/2001	
PA31350	TIO540J2BD	76220	NR 3 CYLINDER	20010516CW001	1097
AT CRUISE FLIGHT, THE NR 3 CYLINDER SEPARATED FROM THE ENGINE CASE, WHICH RESULTED IN AN INFLIGHT FIRE. THE ENGINE CASE, CYLINDER HOLD DOWN STUDS THROUGH BOLT STUDS AND NR 3 CONNECTING ROD WERE SENT FOR LAB INVESTIGATION. INVESTIGATION RESULTS: THE PRIMARY CAUSE WHICH LED TO THE SEPARATION OF THE NR 3 CYLINDER WAS THAT THE THROUGH BOLT STUDS WERE MOST LIKELY NOT PROPERLY TORQUED.					
PIPER	LYC	CRANKCASE	CRACKED	05/01/2001	2077
PA32R301T	TIO540S1AD		ENGINE	20010511CW005	
DURING ANNUAL INSPECTION, NOTICED OIL ON LEFT FORWARD SECTION OF ENGINE. REMOVED PROP GOVERNOR AND ENGINE BAFFLING. FOUND SMALL CRACK IN CRANKCASE, FORWARD OF NR 2 CYLINDER UPPER FORWARD HOLD DOWN NUT. CONDITION PROBABLY CAUSED BY AGE, ENGINE HAS NEVER BEEN OVERHAULED.					
SAAB	GE	HAMSTD	BEARING	03/30/2001	20743
340B	CT79B		GEARCASE	NE032001B2128	
UPON DISASSEMBLY OF GEARCASE FOUND THE RIGHT AFT BEARING AND FORWARD ROLLER BEARING CRACKED. ALSO THE LEFT IDLER BEARING WAS FOUND WITH BRINELLING/SPALLING ON RACEWAYS.					

SKRSKY	HOUSING	CRACKED	04/27/2001	6386
S64E	643566409043	T/R GEARBOX	20010524CW002	

DURING TEARDOWN FOR OVERHAUL, A CRACK WAS VISUALLY NOTICED AT APPROX THE 2 OCLOCK POSITION (AS INSTALLED ON AIRCRAFT) IN THE STRADDLE MOUNT OF THE IDLER GEAR ALIGNMENT BEARING PN SB2154-1 OF CENTER HOUSING PN 6435-66409-043. FURTHER INSPECTION AFTER REMOVAL OF BEARING RETAINER PN 6435-66427-103 REVEALED THE STRADDLE MOUNT WAS CRACKED IN HALF, PASSING THROUGH THE .275 IN DIAMETER HOLE FOR ROSAN STUD PN SF101-125A-6A. NO SECONDARY DAMAGE DUE TO THIS FAILURE WAS NOTED.

SNIAS	BEARING	ROTATED	04/07/2001	2671
AS350B2	83A851BC3	T/R DRIVE SHAFT	20010523CW002	

AT A SCHEDULED INSPECTION THE BEARING PN 83A851BC3 HAD ROTATED IN THE RUBBER BUSHING PN FA3819 APPROX .3750. WE HAVE BEEN COMPLYING WITH SB REGARDING THE GREASING AND INSPECTION OF THESE BEARINGS AND STILL HAD A BEARING TURN. THIS IS AN AREA THAT CALLS FOR SPECIAL ATTENTION DURING INSPECTIONS AND DAILY PRE FLIGHTS. AT THIS TIME WE ARE INSTALLING THE NEWER TYPE BEARINGS THAT THIS SB DOES NOT APPLY

SNIAS	SEAL	MISSING	04/10/2001	2671
AS350B2	350A23106320	T/R DRIVE SHAFT	20010523CW003	

AT A SCHEDULED INSPECTION THE SELF ADHESIVE SEAL PN 350A-1063-20 WAS FOUND NOT TO BE INSTALLED. THIS IS A SEAL THAT IS INSTALLED FOR DISSIMILAR METAL CORROSION ON THE TAIL ROTOR DRIVE SHAFT HANGAR SUPPORT AND THE HANGAR BEARINGS.

SNIAS	BOLT	SHEARED	04/18/2001	7704
AS350BA	22201BC060016L	VERTICAL STAB	KBMA88728 BOLTS SHEARED,	

INSTALLED NEW BOLTS AS REQUIRED.

STBROS	PWA	STBROS	FITTING	CORRODED	03/23/2001	28800
SD360	PT6A65R	SD360	SD3316384XAA	VERTICAL STAB	CA010504007 (CAN)	DURING

MID-LIFE STRUCTURAL INSPECTION THE ABOVE CLEAT WAS FOUND TO BE EXFOLIATED IN VARIOUS SPOTS BETWEEN THE WEBS. IT IS LIKELY THAT STANDING WATER COULD SIT IN THE WEB AREAS AND SPEED UP THE CORROSION PROCESS. THE VERTICAL STAB WAS REMOVED TO OBTAIN ACCESS TO THE CLEAT. THE CLEAT WAS REPLACED AND THE VERTICAL STAB REINSTALLED.

DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION		OPER. Control No.		8. Comments (Describe the malfunction or defect and the circumstances under which it occurred. State probable cause and recommendations to prevent recurrence.)	DISTRICT OFFICE	OPERATOR DESIGNATOR
MALFUNCTION OR DEFECT REPORT		ATA Code				
		1. A/C Reg. No. N-				
Enter pertinent data	MANUFACTURER	MODEL/SERIES	SERIAL NUMBER			
2. AIRCRAFT						
3. POWERPLANT						
4. PROPELLER						
5. SPECIFIC PART (of component) CAUSING TROUBLE						
Part Name	MFG. Model or Part No.	Serial No.	Part/Defect Location.			
6. APPLIANCE/COMPONENT (Assembly that includes part)						
Comp/App'l Name	Manufacturer	Model or Part No.	Serial Number			
Part TT	Part TSO	Part Condition	7. Date Sub.	Optional Information:		
				Check a box below, if this report is related to an aircraft		
				<input type="checkbox"/> Accident; Date _____ <input type="checkbox"/> Incident; Date _____		
				REP. STA.	OPER.	
				MECH.	AIR TAXI	
				MFG.	FAA	
				COMPUTER	OTHER	
				SUBMITTED BY:		
				TELEPHONE NUMBER: () —		

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Use this space for continuation of Block 8 (if required).

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